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Fluke 110 Series True-rms Digital Multimeter
Extended Specifications

Model Differences
(all other specifications are the same for each model)

Feature	Model		
	110	111	112
Current Measurement		•	•
Backlight			•

Nominal Specifications

Function	Absolute Range or Description	
	Model 110	Models 111 and 112
AC Voltage, True-rms	300 mV to 600.0V (50 Hz to 500 Hz)	
DC Voltage	1 mV to 600.0V	
Continuity	Beeper guaranteed on < 20Ω, guaranteed off > 250Ω; detects opens or shorts of 250 µs or longer.	
Resistance	0.1Ω to 40.00 MΩ	
Diode Test	2.200V, 0.9% + 2 digits, audible feedback	
Capacitance	1 nF to 9999 uF	
AC Current, True-rms	NA	0.01A to 10.00A (20.00A overrange for 30 seconds)
DC Current	NA	0.001A to 10.00A (20.00A overrange for 30 seconds)
Frequency of Voltage	5 Hz to 50 kHz	
Frequency of Current	NA	50 Hz to 5 kHz
Basic DC Voltage Accuracy	0.7%	
Basic AC Voltage Accuracy	1.0%	

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Features

Feature	Description
Backlight (Model 112 only)	Automatically extinguishes after 2 minutes to save battery life The timeout feature can be disabled with a power-up option
HOLD	Display hold, freezes the display at the push of a button
MIN MAX AVG	Minimum, maximum, and average reading memory
Manual or auto ranging	In auto range, the meter selects the range with the best resolution for the present measurement value
Fast continuity/open detection	The beeper sounds with a stretched pulse for opens or shorts as brief as 250 µs
Beeper	Used in continuity and diode test functions, to signal new minimum and maximum in MIN MAX mode, and to signal valid and invalid button presses
Test lead alert	The message "LEAD" appears briefly on the display when the rotary switch is moved to or from any **A** (Amps) position
Power-up options	(1) Turn on all LCD segments, (2) Disable beeper, (3) Disable sleep mode, (4) Disable backlight timeout (Model 112 only)
Closed-case calibration	No internal adjustments needed
Probe holders	The standard-equipment protective holster has probe holders on the sides for probe storage and for convenience when making measurements
Battery access door	The battery is replaced easily by removing one Phillips head screw that fastens a battery door on the meter's back cover
Replaceable fuse (111 and 112)	A user-replaceable heavy-duty ceramic fuse protects the DMM from application of excessive current to the **A** (Amps) input jack. Use the exact replacement fuse as stated on the meter back cover
The high-impact case and protective holster	The 110 Series DMMs are tested to withstand a drop of 1 meter to a hard surface

Detailed Specifications

Accuracy is specified for 1 year after calibration, at operating temperatures of 18°C to 28°C, with relative humidity at 0% to 75%. The accuracy specifications take the form of: ± ([% of Reading] + [Counts])	
Maximum voltage between any terminal and earth ground	600V
Surge Protection	6 kV peak per IEC 61010-1-95
Fuse for A input (111 and 112)	11A, 1000V FAST Fuse, minimum interrupt rating 17000A
Display	Digital: 6,000 counts, updates 4/sec Bar Graph: 33 segments, updates 40/sec Frequency: 9,999 counts Capacitance: 9,999 counts
Temperature	Operating: -10°C to +50°C Storage: -30°C to +60°C
Temperature Coefficiant	0.1X (specified accuracy/°C) (<18°C or >28°C)
Electromagnetic Compatibility	Performance ≥ 3 V/m is not specified
Relative Humidity	Noncondensing < 10°C 0% to 95% @ 10°C to 30°C 0% to 75% @ 30°C to 40°C 0% to 45% @ 40°C to 50°C
Battery Life	Alkaline: 300 hrs typical, without backlight
Size, with Holster (H x W x L)	4.6 cm x 9.6 cm x 16.0 cm
Weight	350g
Safety Compliances	ANSI/ISA-S82.01-1988, CSA C22.2 No 231 and IEC 61010-1-95 Overvoltage Category III (CAT III), 600V
Warranty	Three years
Certifications	UL (3111), CE, CSA, TÜV, (N10140)

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Function	Range	Resolution	Accuracy ±([% of Reading] + [Counts]) Model 110	Model 111	Model 112
AC Volts[1,2] — True-rms (50 Hz to 500 Hz)	6000 mV[3] 6.000V 60.00V 600.0V	1 mV 0.001V 0.01V 0.1V	1.0% + 3	1.0% + 3	1.0% + 3
DC Volts	6000 mV[3] 6.000V 60.00V 600.0V	1 mV 0.001V 0.01V 0.1V	0.7% + 2	0.7% + 2	0.7% + 2
Continuity	600Ω	1Ω	Beeper guaranteed on <20Ω, guaranteed off >250Ω; detects opens or shorts of 250 µs or longer.		
Ohms	600.0Ω 6.000 kΩ 60.00 kΩ 600.0 kΩ 6.000 MΩ 40.00 MΩ	0.1Ω 0.001 kΩ 0.01 kΩ 0.1 kΩ 0.001 MΩ 0.01 MΩ	0.9% + 2 0.9% + 1 0.9% + 1 0.9% + 1 0.9% + 1 1.5% + 3	0.9% + 2 0.9% + 1 0.9% + 1 0.9% + 1 0.9% + 1 1.5% + 3	0.9% + 2 0.9% + 1 0.9% + 1 0.9% + 1 0.9% + 1 1.5% + 3
Diode test	2.200V	0.001V	0.9% + 2		
Capacitance[4]	1000 nF 10.00 µF 100.0 µF	1 nF 0.01 µF 0.1 µF	1.9% + 2 1.9% + 2 1.9% + 2	1.9% + 2 1.9% + 2 1.9% + 2	1.9% + 2 1.9% + 2 1.9% + 2
	10000 µF	1 µF	100 µF - 1000 µF: 1.9% + 2 > 1000 µF: 10% + 90 typical		
AC Amps[5] — True-rms (50 Hz to 500 Hz) (Models 111 &112)	10.00A continuous or 20A overload for 30 seconds maximum	0.01A	NA	1.5% + 3	1.5% + 3
DC Amps (Models 111 & 112)	6.000A 10.00A continuous or 20A overload for 30 seconds maximum	0.001A 0.01A	NA	1.0% + 3	1.0% + 3
Hz[6] (V or A input)	99.99 Hz 999.9 Hz 9.999 kHz 50.00 kHz	0.01 Hz 0.1 Hz 0.001 kHz 0.01 kHz	0.1% + 2	0.1% + 2	0.1% + 2
MIN MAX AVG Accuracy and Response Time	Accuracy is the specified accuracy of the measurement function ±12 digits for changes >200 ms in duration (±40 digits in AC). Typical response time: 100 ms to 80% of signal, except V AC and A AC.				

1. AC voltage ranges are specified from 5% of range to 100% of range.
2. Crest factor of ≤3 at full scale up to 300V, decreasing linearly to crest factor ≤1.5 at 600V.
3. The 6000 mV range can only be entered in Manual Range mode. Use the 6000 mV range with accessories.
4. For film capacitors.
5. Crest factor of ≤3. AC current is not specified below 3A.
6. Hz is specified from 5 Hz to 50 kHz in volts, from 50 Hz to 5 kHz in amps.

Function	Input Impedance (Nominal)	Common Mode Rejection Ratio		Normal Mode Rejection
Volts AC	>5 MΩ <100 pF	>60 dB at DC, 50 Hz or 60 Hz		
Volts DC	>10 MΩ <100 pF	>100 dB at DC, 50 Hz or 60 Hz		>50 dB at 50 Hz or 60 Hz
		Full Scale Voltage		
	Open Circuit Test Voltage	**To 6 MΩ**	**40 MΩ**	**Short Circuit Current**
Ohms	<1.5V DC	<600 mV DC	<1.5V DC	<500 µA
Diode test	2.4 to 3.0V DC	2.400V DC		1.2 mA typical